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Agricultural Memorandum No 787

Swede Mildew - Simplified Criteria

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Ag Mems 784 and 786 used criteria which were compatible with known features of the disease on a weekly basis.

Simplified criteria now suggest themselves, namely:-

A = Potential Transpiration minus Rainfall, June, July and August

B = Number of weeks between Shaw weeks 34 and 43, with a highest maximum of 77°F or above.

Eight sample stations were used:-

1. Newton Rigg
2. Cockle Park
3. High Mowthorpe (Ampleforth rain and PT)
4. Askham Bryan
5. Sprowston
6. Rothamsted
7. Preston Wynne (Ross rain and PT)
8. Newton Abbot (Exeter rain and PT)

The 1966 distribution of swedes and turnips, shows that the largest acreages (1000S) were grown in:

Yorkshire,	31	(Stations 3 & 4)
Somerset, Devon, Cornwall,	19	(Station 8)
Northumberland and Durham,	18	(Station 2)
Cumberland and Westmorland,	11	(Station 1)
Hereford and Shropshire,	9	(Station 7)
Norfolk and Lincoln,	8	(Station 5)

Rothamsted was included because trials were carried out there.

The disease index was taken to be A + 2B, the results are shown in the following table.

Index Values

	NR	CP	HM	AB	S	R	PW	NA	Total
	1	2	3	4	5	6	7	8	
1957	2.7	0.2	0.2	4.3	5.7	9.7	11.7	11.3	45.8
1958	1.5	- 1.2	2.6	3.1	4.8	5.4	3.4	0.5	20.1
1959	8.0	11.6	12.9	18.6	20.6	17.0	17.6	13.2	119.5
1960	4.3	0.2	0.4	4.1	2.5	2.4	5.1	5.1	24.1
1961	1.3	4.1	6.2	7.2	15.0	9.9	10.1	7.8	61.6
1962	0.4	2.4	3.0	3.3	5.3	5.1	6.6	7.9	34.0
1963	2.0	- 4.8	- 0.3	5.7	4.0	6.9	5.7	3.1	22.3
1964	1.6	3.2	9.7	12.1	18.7	16.4	13.7	7.6	83.0
1965	1.1	- 1.4	1.8	3.2	4.4	0.5	2.9	2.0	14.5
1966	- 0.8	- 1.2	0.0	- 1.0	5.7	4.3	9.7	8.1	24.8
1967	- 1.8	2.3	2.0	7.6	14.9	8.6	10.6	5.7	49.9

Ringed years were known to be severe for swede mildew.

1967 produced severe outbreaks in South Midlands.

A possible improvement might be the number of days with a maximum of 77°F or above, but this information is not readily available, although an operational system could be devised using such a parameter from synoptic stations.

The omission of Rothamsted, around which there is only a small acreage of swedes and turnips, does not alter the analysis.

e.g.

1959	112	1967	41	1960	22	1958	15
1964	67	1957	36	1966	20	1965	14
1961	52	1962	29	1963	15		

Any comments of suggestions on this paper should be referred to the author.

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